

FACTORS RESPONSIBLE FOR UNDER REPORTING OF NOTIFIABLE INFECTIOUS DISEASES BY GENERAL PRACTITIONERS: A VEILED REALITY

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ABSTRACT

Background: Effective surveillance is the key to effective disease control in the community. Any such surveillance through proper reporting system would not only help to control the spread of these infectious diseases but also ensures appropriate treatment. This study investigated the knowledge, attitude and practices regarding notifiable diseases among general practitioners in North Karachi.

Methods: A total of 175 doctors working as General Practitioners in Karachi, Pakistan, were asked to participate in this study and pattern of reporting of diseases was investigated through a self administered questionnaire. The response rate was 97% (170/175).

Results: It was found that among the total practitioners, 78% routinely diagnosed the notifiable diseases but only 50% deliberated to report one or more of those diseases. Knowledge of dengue reporting was evident in 52.9% of the participants followed by typhoid 48%, chicken pox 47%, hepatitis 46% and malaria 43%.

Conclusion: Most of the practitioners were found to be incompliant towards reporting of notifiable diseases. Lack of time was found to be the major reason for not reporting a disease, followed by confidentiality and poor knowledge of the reporting procedures. To improve the reporting practices among general practitioners, it seems that a convenient and easy reporting system should be introduced and to provide knowledge and awareness among doctors about the different infectious diseases and their reporting means. This will certainly help our GPs to strengthen the notification system of such diseases.

Key Words: Notifiable communicable diseases, general practitioners, under reporting.

INTRODUCTION

Effective surveillance is the key to effective disease control in the community.¹ Any epidemiological surveillance that is carried out through an appropriate and mandatory reporting system not only prevents a problem but can also successfully plan a control programme and ensure appropriate medical therapy.^{2,3} A Notifiable disease is one for which regular, frequent and timely information regarding individual cases is considered necessary for the prevention and control of the disease. Anecdotal evidence suggests, however, that the occurrence of notifiable infectious diseases is seriously underestimated and many doctors do not notify any infectious disease at all.⁴ The reporting of such diseases at Primary level protects public health by identifying cases and giving them timely follow-up. Many doctors from Germany, Australia⁵ and UK⁶ are fully aware of the reporting system and its need and importance within their countries. Monitoring data enables the health authorities to detect rising trend in disease distribution, changes in host factors and health care practices.¹

Diseases Notifiable (to Local Authority) issued by Disease Early Warning System designed by WHO⁷ are

categorized as: Diseases to be reported within 24 hours are plague, dengue, polio, cholera. Diseases reported weekly are measles, meningitis, malaria, viral hepatitis, diphtheria, pertussis, tetanus, typhoid and Influenza.⁷

The most common reason for not reporting a communicable disease was confidentiality towards patient disease¹ and breach in patient privacy as seen in primary care doctors from Taiwan. A survey of doctors in Primary Health Centre at Guimarães suggested that main reasons of failure to report were excess work, lack of time, outdated forms and their perception of thinking this reporting as not useful.⁸ South African doctors were of the view that insufficient feedback from the local health authority results in poor motivation and forms are complex.⁹

This study was aimed to assess knowledge and practices of general practitioners regarding reporting of notifiable diseases and factors associated with its under reporting. This would be helpful in identifying gaps and creating an awareness about importance of notification in the society and ultimately having better control over communicable diseases.

MATERIAL AND METHODS

This was a descriptive cross sectional study conducted among general practitioners from different areas of Karachi. A pretested self administered questionnaire in English language was used for data collection. Questionnaire was taken from the study of private doctors practices, knowledge, and attitude to reporting of communicable diseases: a national survey in Taiwan¹ and was modified accordingly. The Ethics review committee reviewed and approved the study protocol. Informed consent was obtained from the participants after explaining them about the study protocol. The sample size was calculated out as 170 by using the WHO software where $\alpha = 0.05$, $1-\beta = 90$, $P_0 = 0.65$, $P_a = 0.45$ and the sampling technique was non-probability purposive. All general practitioners from Karachi practicing for more than five years were included and general practitioners having any affiliation with teaching hospitals were excluded.

Data entry and analysis was done using SPSS version 16. Descriptive analysis was performed. Frequencies (%) were generated.

RESULTS

A total of 170 doctors completed and returned a self administered questionnaire. The basic characteristics of these doctors is presented in Table 1. Nearly 44% of the general practitioner's were 41 – 50 years old followed by 37% of 30 – 40 years and 18% of 51 – 60 years old. Most of them were males (78%) and were practicing for more than 10 years (54%). Post graduate qualification was obtained only by 17% of general practitioners.

Table 1: *Demographic Profile of General Practitioners n = 170.*

Variables	Options	Frequency	Percentage
Age	30 – 40	63	37.1
	41 – 50	75	44.1
	51 – 60	31	18.2
Gender	Male	133	78.2
	Female	37	21.8
Years of practice	5 – 10 years	76	44.7
	> 10 years	92	54.1
Qualification	MBBS	141	82.9
	Post Graduate	29	17.1

Knowledge updates, diagnoses of a disease and reporting practices of the subjects are represented in Table 2. Doctors updated their knowledge through reading journals (25%) and attending CME's (68%). Most of them (78%) diagnosed communicable disease dur-

ing their practice and 50% (n = 85) reported them. Majority (57%) started reporting for the last one year among those who practice reporting and responded to the question (n = 61). Most commonly used method (55%) of reporting these diseases was email.

The doctors' knowledge about reportable diseases was presented in Table 3. The opinion of reporting of

Table 2: *Practices related to reporting of notifiable diseases among doctors.*

	Options	Frequency	Percentage
Knowledge Update	CME	108	63.5
	Journals	40	23.5
	Both	9	5.3
Ever Diagnosed CD	Yes	134	78.8
Ever reported CD	Yes	85	50
Reporting for how long n = 61	6 months	7	11.4
	1 year	35	57.3
	More than 5 years	19	31.1

Table 3: *Knowledge about communicable diseases that need to be reported (n = 46).*

Diseases to be Reported	Frequency n = 170	Percentage
Plague	44	25.9
Dengue	90	52.9
Cholera	46	27.1
Polio	73	42
Measles	51	30
Meningitis	54	31.8
Tetanus	46	27.1
Hepatitis	78	45.9
Malaria	74	43.5
Diphtheria	34	20
TB	61	35.9
Typhoid	82	48.2
Mumps	63	37.1
Chickenpox	80	47.1

diseases among all the GPs, was found to be 26% for plaque, 53% for dengue, 27% for cholera and 43% for malaria. Whereas their opinion for vaccine preventable diseases found to be 30% for measles, 31% for meningitis, 27% for tetanus, 43% for polio, 48% typhoid, 37% mumps and 47% for chickenpox. The opinion of reporting of chronic infections like hepatitis and tuberculosis was 46% and 36% respectively.

Table 4 depicts the reasons for not reporting communicable diseases. Most frequent cause identified by 53% of the participants was time constraint in the clinics, followed by confidentiality in 51% and lack of knowledge according to 40%. About 23.5% were of the view that treatable diseases were not required to report whereas 76% disagreed. On the other hand 29% thought that others would report the disease whereas 30% were of the view that means for reporting are not available.

Table 4: *Reasons for not Reporting Communicable Diseases among Primary Doctors.*

Reasons	Frequency	Percentage
Confidentiality	87	51.2
Lack of knowledge	69	40.6
Troublesome procedure	63	37.1
Time constraints	91	53.5
Unaware of reporting mechanism	77	45.3
Patient was treated	40	23.5
Others will / might report	50	29.4
Reporting means unavailable	52	30.6

The attitude of the general practitioners about reporting communicable disease presented in table 5. Approximately 79% felt that they would report if they knew about the system and 91% agreed that it's their responsibility to report. About 90% were of the view that it is important to maintain the safety of their practices. The primary care Doctors (53.4%) were of the view that if the disease is not severe it should not be reported but 46.6% denied the above statement. Interestingly, 57% thought that some kind of penalty will improve their reporting practice. Among all participants, 51% thought that they should report to town office. Many of them 54.6% thought that if reporting methods are simplified and doctors are provided feedback from higher ups, then chances of reporting communicable diseases will increase.

DISCUSSION

This study revealed many aspects regarding notifiable disease among general practitioners of Karachi. The

Table 5: *Attitude of Primary Care Doctors towards Reporting of Communicable Diseases.*

Opinions	Frequency	Percentage
Are you always willing to report	134	78.8
Do you think Reporting is your responsibility	154	90.6
Is it safe for your practice to report	153	90
Less likely to report if disease not severe	91	53.5
Penalty will increase reporting	98	57.6
<i>Your feelings about the system</i>		
Convenient	53	31.2
Not convenient	42	24.7
Not familiar	69	40.6
<i>Where to report</i>		
Town Health officer	85	50
Local authority	31	18.2
Other	49	28.8
<i>Measures that will make you report</i>		
Simple method with feedback	89	52.4
Simple method only	32	18.8
Feedback only	22	12.9
Commendation by ministry of health	19	11.2
All above	1	0.6

survey has clearly identified the non compliance of appropriate reporting whereas majority knew and agreed unanimously on reporting dengue followed by hepatitis, polio, malaria and tuberculosis etc, but admissed response for plague, cholera and diphtheria. This may be because of recent trends of epidemics of former infectious and reduced incidence of latter ones. It was found that doctors felt and accepted their responsibility to report an infectious disease provided they knew the mechanism of reporting. Some feared that the reporting procedures are tedious and difficult. Most common reason for not reporting a particular disease was found out to be time constraints and confi-

dentiality towards their patients which was similar to another study¹ where the major reason reported was patient privacy. This was followed by poor compliance towards responsibility that others would report, and unavailability of reporting means. Surprisingly very few admitted that time was an important factor causing hindrance, which is quite different from a similar study done in Iran.¹⁰

While most doctors agreed that it is their responsibility to report and extremely essential for the safety of their practice but they are not familiar with the system. Appropriate feedback⁹ and simple reporting method would increase their willingness to report. Another unexpected outcome was that penalty for not reporting did not cause a significant impact as compared to our reference study.¹

In our study 78% of the general practitioners diagnosed communicable diseases but only 50% thought it was important to report them. This is quite surprising and raises alarm as to what is preventing them to report. Diseases frequently encountered e.g. malaria, typhoid, TB and hepatitis are well known and should be reported according to the primary doctors whereas diseases which are highlighted by the print and electronic media and suffered an outbreak recently e.g. Dengue fever has the highest percentage for the disease to be reported. Diseases like plague, meningitis and diphtheria which are not very frequently encountered have the least votes to be reported whereas cholera is usually mistaken as ordinary diarrhea and often fail to report.

It is **Concluded** that the knowledge of primary doctors towards reporting a communicable disease was poor and there were a few misperceptions in their practice like confidentiality towards patient. Many of them had identified but did not report these diseases either because of lack of time, unavailable means or cumbersome reporting procedure. Our results revealed that majority of GPs were unaware of the method and portal of reporting of infectious disease. Thus indicating a critical lacking of Health management information system at primary care level.

We recommend that in order to improve reporting practices it is important to modify the attitude of general practitioners, educate them about various communicable diseases through seminars and CME's and electronic and print media. There is a need to develop an appropriate infrastructure for reporting these diseases which is easy and reachable will create motivation among doctors. Provision of feedback, monthly alerts and disciplinary actions for not reporting a particular communicable disease may increase the chances of disease being reported.

The importance of this survey is to detect a breach in the reporting system and factors that are responsi-

ble for under reporting. An organized reporting system will curtail the number of illnesses and death and will prepare the health authorities for any upcoming disasters and epidemics.

Ethical Approval

Ethical approval was obtained from Ethical Review Board, Karachi Metropolitan Corporation.

Competing Interests

The authors have declared no competing interests.

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